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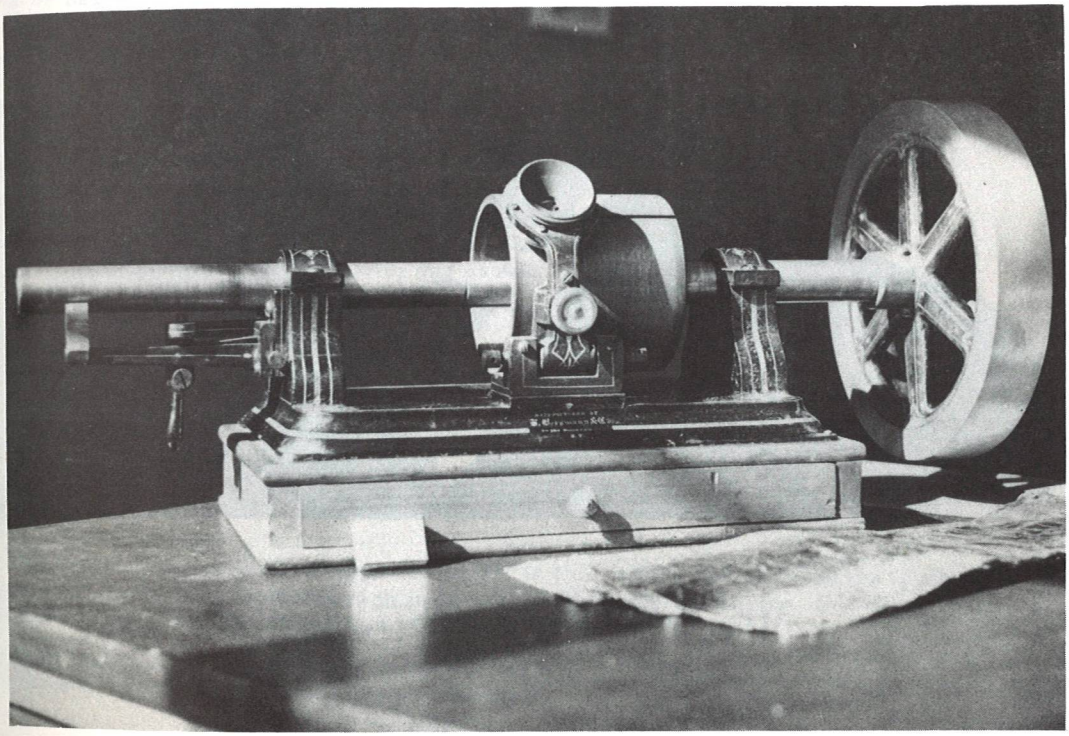


Mr. Edmunds in 1877, aged 24.

Edchat

A disadvantage of being a one-man band is that if you are distracted from playing, the entire band stops. Thus it is that the Editor, having spent September slaving over a hot typewriter to meet a publisher's deadline (for a book connected not in the slightest way with sound reproduction) finds himself well into October with that month's magazine still incomplete and not ready even for the printer. I hope that readers appreciate that editing and typing Hillandale occupies most of my free evenings for up to three weeks before it goes to press, and that I therefore cannot guarantee to produce the goods on time, every time.

In response to a previous comment in this column, suggesting that collectors should not take themselves too seriously, Frank Holland writes from the Musical Museum at Brentford. He re-assures us that, in that august establishment, they are a 'jolly lot', and there was much merriment recently when they took delivery of a Gaydon Stentorphone. This came with a vast and very heavy insulated chest containing the compressor and its period electric motor. The carriers plonked this down on the stone slab which Frank has earmarked, it seems, to be his own tombstone when the time comes. It did not take long to connect the motor up to a 105-volt D. C. supply and have it running, and Frank commented as they admired their work that the chest had plenty of space in it, and there would be nothing he would like more than to be buried in this highly unconventional coffin. The Curator, however, would have none of this - they could not possibly bury their equipment along with their founder!

There was one problem remaining with the Stentorphone: it had no soundbox, or at any rate no compressed-air soundbox. Frank is anxious to find or to reconstruct this vital element and if anyone out there has what looks like a piece of a gas-stove attached to a large aluminium tone-arm, be advised that this may be a Stentorphone soundbox and just what Frank Holland needs, if only to borrow and copy. I have provided a list of Patent numbers covering the Gaydon compressed air soundboxes, although I was not able to come up with any usable working diagrams from the Patent Abridgements. What I did find while looking these out was another Gaydon Patent, for a gramophone horn concealed in a fountain. I can't help feeling that Gaydon should somehow have got together with the designer of the Flamephone. They could perhaps have produced the first gramophone that brewed a cuppa while playing Tea for Two.....

COVER ILLUSTRATION

To accompany the article on Henry Edmunds in this issue, we show on the front cover the Bergmann tinfoil phonograph presented to Edmunds by Edison in 1879 (Photo by courtesy of Paul Tritton).

The FRONTISPIECE shows Henry Edmunds in 1877
(Photo by courtesy of Rolls-Royce Motors Journal)

TOMATOES RECORDED

HENRY EDMUNDS AND THE FIRST BRITISH ROYAL RECORDING by F. Andrews.

This article has been assembled at the instigation of our President, following correspondence with Mr. Paul Tritton, of Industrial Editorial Services. Mr. Tritton has been writing an account of the meeting of the Hon. Charles Rolls and F. H. Royce through Henry Edmunds, from which, of course, sprang the famous Rolls-Royce buisness. The essay was published in the Rolls Royce Journal, and having written a comprehensive survey of Edmunds' early career Mr. Tritton hopes to publish a full biography. His researches have extended to the Edison Historic Site and he has given the Society permission to publish what we wish about Edmunds, in connection with the tin-foil phonograph and the Graphophone.

It may be unnecessary to remind readers of Hillandale that Henry Edmunds was the first Englishman to see and hear the tin-foil phonograph, and to give an account of it to the Times when he returned to England, and was also the first to bring a Graphophone to Britain, ten years later.

Edmunds and Rolls were known to one another as members of the Automobile Club of Great Britain and Ireland: Edmunds also happened to be a director of Royce's engineering company, and he arranged the meeting of the two men in 1904, but the story of Rolls-Royce is not relevant to the present history.

Henry Edmunds was born in 1853: his father was a partner in the Halifax firm of Edmunds and Hookway. His mother died two months after his birth and his father re-married three years later. Leaving the last of his private schools at the age of 15 (in 1868), he entered his father's business as an engineer. He began inventing at the age of 18, and he was to be associated with more than 150 inventions subsequently.

In 1877, through a meeting with a customer, John Crossley M. P. (of Crossley carpets fame), he was invited to attend the first demonstration in England of the latest form of arc lighting - held in the West India Docks on June 1st. This was the Jablochkoff candle, which in the event proved unsuccessful. Edmunds promptly invented his own carbon arc lamp, which changed his way of life, for at a successful display of the Jablochkoff candle, he met a Mr. Werdermann, who owned the American patents to another arc-lamp. Edmunds explained his sytem to Werdermann, and the two then crossed to America to exploit the patents (Edmunds having an introduction to William Wallace, inventor of the first American dynamo, from whom he hoped for assistance.) Wallace had invented a superior arc lamp system, in association with Moses Farmer, and Edmunds agreed to become their European representative. But before returning to England he undertook a number of tours in the eastern United States, which is how he became the first Englishman to hear and see Edison's phonograph.

THE TIN-FOIL PHONOGRAPH

Edmunds was staying in Ansonia, Conn. when he went on his first tour in August 1877. Nine days later he returned to William Wallace in that town. The latter was entertaining a number of visitors including Thomas Edison and a friend of his, Professor George Barker of Pennsylvania University.

Edmunds again went on tour at the end of August and it was not until the first few days of December 1877 that he arraived in New York, intending to sail back to Britain. Edmund's exact movements between arriving in New York and departing for England are not clear. He kept a day-by-day account of his visit to America, and he wrote about some of his experiences some 40 years later for a friend's magazine. Unfortunately, it appears that, on arrival in New York on December 3rd Edmunds probably packed his belongings ready for the steamer and put his diary with them, as December 3rd was the last day of entry.

Charles Batchelor, of the Edison Laboratory, noted that the tin-foil phonograph was made on December 4th and 'finished' on December 6th. The 5th was a Wednesday, Edmunds was known to be sailing back on a Wednesday, and two ships were leaving New York on a Wednesday - but Edmunds did not leave. He had gone to see a show on Broadway on either the 3rd or 4th of December. When he returned to his hotel a message awaited him to the effect that Governor Howard would call on him in the morning. Henry Howard knew of Edmunds and his connection with electric lighting, and wanted Edmunds to meet some friends of his in Providence, Rhode Island, where he was installing a telephone system. Howard prevailed on Edmunds to delay his departure for a week. Edmunds then met Professor George Barker again, and was invited by him to Menlo Park, where Edison had just finished making the phonograph. They left Manhattan's Penn Station on a journey which, in those days, took a considerable time (the Hudson River was crossed by ferry), and they arrived at the Edison laboratory in the afternoon, but on which day is open to doubt. It was not the 4th of December, for that was the day that Howard and Edmunds met and, in any case, the phonograph was only assembled that day, and it was not the 7th, for that was the day that Edison demonstrated his machine to the Scientific American at its Manhattan office. Therefore, it must have been either on Wednesday the 5th or Thursday the 6th - the day that some held was the date of Edison's famous 'Mary Had a Little Lamb' recording.

Forty years later, Edmunds described his visit thus:
"In a dimly-lighted interior we could just see Mr. Edison and his assistant working on a small brass cylinder covered with tinfoil. Edison held up his hand dramatically. We halted. He slowly turned the cylinder with a handle and an unearthly, metallic voice with a strong American accent spoke the words 'Mary Had a Little Lamb.' We had arrived in time to hear the first reproduction of mechanically recorded speech."

Back in England, Edmunds was in London in January, where he had opened an office as the representative of the Wallace, Farmer lighting system. (One of the

first installations was at Liverpool Street Station.) Edmunds' account, the first, of Edison's phonograph appeared in The Times on January 12th 1878. A day or so later, Edmunds met William Preece, the Chief Engineer of the G.P.O., and presented him with a letter of introduction from Edison. Preece was due to demonstrate the telephone to the Royal Society on February 1st, and he wished to include Edison's 'talking machine' in his lecture. A machine was accordingly built by one of his assistants, from Edmunds' drawings of the Edison machine.

Edmunds corresponded regularly with Edison and had hopes of becoming the British agent for the phonograph, but this did not ensue. However, Edison did present Edmunds with a 'demonstration' phonograph in 1879, and they remained friends for the rest of their lives. The phonograph survives in private hands today.

In 1879 Edmunds was instrumental in bringing together Thos. F. Montgomery, European representative of Chas. F. Brush, the electrician of Cleveland, Ohio, and John S. Sellon, a partner in the Hatton Garden firm Johnson, Mathey and Co. The two men formed the Anglo-American Electric Light Company, with Edmunds as Chief Engineer, and this was the fore-runner of the Brush Electrical Engineering Co.

Edmunds soon left this concern and returned to his home town of Halifax, where he was the Brush agent, and where, in June 1880, he married. That year Edmunds visited Joseph Swan, patentee of an incandescent electric lamp which went into production in 1881. Edmunds, on a commission of 5/- per lamp (the selling price was 25/-), began selling these, and he managed to convince the Admiralty that they should install them on their latest battleship, H.M.S. Inflexible. After the death of Mrs. Edmunds while giving birth to twins, Swan befriended Edmunds and they went into partnership to sell Swan's lamps overseas. Edmunds sold the U.S.A. patent to Charles Brush through Thomas Montgomery, and in 1882 returned to America to set up the Brush, Swan Electric Light Company. By chance, he again met Governor Howard, and went to work for him on his Rhode Island industrial projects. He met and married Howard's niece, and they set up home in London near Streatham Common.

A few months later, Edmunds renewed an acquaintance with a former supplier of electric cables, Walter J. Glover, and in 1886 Glover and Edmunds became partners and developed W. J. Glover and Co. into one of Britain's biggest manufacturers of electrical cables. This led to Edmunds' association with the Graphophone.

THE GRAPHOPHONE

In America again in 1888 on a business trip, Edmunds met Charles Tainter in Washington. (This was two years after the Bell-Tainter patent had been granted.) An agreement was reached that Edmunds and Glover, as W. J. Glover and Co., should be the European agents for the Graphophone. Production started in 1888. Back in Britain, on the 6th of September Edmunds gave the first demonstration of the Graphophone in this country at the annual meeting of the British Association for the Advancement of Science. Edmunds recalled later that, within days, his London office was 'thronged with persons of all grades of Society' desiring to hear a demonstration of the Graphophone, and it became clear that Queen Victoria, on holiday at Balmoral,

1. SOMETHING OLD...

"At first it had a curious tendency to repeat back anything I said, but I finally managed to cure it"

also wished to hear how the Graphophone performed. Edmunds later wrote that he was unable to travel to Scotland to demonstrate the machine, and he sent his solicitor friend, Sydney Morse, in his stead.

QUEEN VICTORIA'S TOMATOES

Morse's account of the event, as related by Edmunds, says:

"Abandoning the usual Royal reserve, Her Majesty expressed her unqualified delight, so much so that Mr. Morse was emboldened to request the Queen to speak a few words.....Mr. Morse exhibited to me a small black cylinder containing the record of the voice and speech of the celebrated Queen."

(The Queen, of course, was to record again, ten years later, on a wax cylinder, with a message to the Emperor of Abyssinia - a recording which was destroyed, by request.)

Mr. Tritton states that enquiries leave no doubt that Edmunds' account of the Queen's recording in 1888 is correct, and that the recording certainly survived until 1929. Several people have been traced who heard it in the 1920s, including Morse's grandson, David Morse, who recalls the recording:

"There was a loud scratching for the first few minutes, then a short sentence in a female voice, of which one word was 'tomatoes' - then further scratching. I always understood that Queen Voctoria was only cajoled into speech, when the recording time was nearly over, by my grandfather indicating various objects in the room which might provoke a comment from Her Majesty."

After Sydney Morse's death in 1929, a Graphophone and two cylinders were offered to the Science Museum in London. The Museum's Provenance Files are reported to state "A Graphophone cylinder of cardboard" and "a wax cylinder on which Queen Victoria spoke a few words". It is then claimed that the Museum accepted the Graphophone cylinder, refused the Graphophone machine as it was not in working order, and when the Museum officials visited Edmund Morse (Sydney's son), it was discovered that the wax cylinder allegedly containing Queen Victoria's voice had been 'mislaid'. The officials are quoted , in any case, as stating that they regarded it as "Having no claim to a place here".

I agree with Mr. Tritton's opinion that the Science Museum's representatives were mistaken in thinking that the wax cylinder contained the Queen's voice, for as there is no doubt that it was the Graphophone that was taken to Balmoral, the recording must have been on a wax-coated cardboard cylinder. The Graphophone cylinder has been found at the Science Museum, but they have no Graphophone on which to play it, and a microscopic examination of the grooves reveals no trace of a recording.

However, the presence of grooves on the cylinder certainly indicates that someone at some time attempted, at least, to make a recording or recordings on it. Until someone devises a means of playing the cylinder (surely not beyond the resources of the Science Museum workshops? - Ed.), there the mystery of the fate of the Queen and her tomatoes rests.

EPILOGUE

At the meeting in Bath during which Edmunds demonstrated the Graphophone in 1888, Col. Gouraud also demonstrated the Edison Improved phonograph. A full report of Edmunds' lecture was re-printed in the Talking Machine Review No. 33 (April 1975).

In this, Edmunds reviews the whole history of the invention of the talking machine, and goes through the patent history to date. He mentions the machine given to him by Edison and his visit to Menlo Park, and quotes his friend Edison as having said, "I dropped the phonograph and went to work upon electric light," and reminds us that Edison abandoned his phonograph patents before the Bells and Tainter took out theirs. At the time of the lecture, of course, Edmunds was representing the Bells and Tainter in Britain and, friendship with Edison or no, he claimed "all the praise accorded to Mr. Edison and his agents for the 'Improved Phonograph" is fairly due to Mr. Charles Sumner Tainter and his associates in the Volta Laboratory Association." Edison had, of course, taken on the Graphophone principle of recording by engraving into wax, already covered by a two-year-old patent.

Four months after demonstrating the Graphophone at Bath, Walter J. Glover and Co., of which Edmunds was a partner, helped set up a private limited company called The Graphophone Syndicate Ltd., capitalised at £100,000 in £10 shares, with its offices at 11 Queen Victoria St., on January 14th 1889. The company's aim was to take over the Graphophone's British patents, held through its London patent agent by the Volta Graphophone Co. The patents were to be assigned to the Graphophone Syndicate under two agreements of January 31st 1889. One of the agreements was with Walter J. Glover and Co., the other with Woodhouse and Rawson Ltd, who must also have had some interest in the Graphophone at that time. The new company was to engage in the manufacture and supply of devices for reproducing or recording sound and the records and any part or article pertaining to them.

What business the company actually accomplished is uncertain; the Graphophone was taken out of production in America after a few years of being hired out. In 1892 letters sent to the company's address by the Companies Registration Office were returned 'Gone Away', and the name was struck from the Register in 1893. By then, the new Edison Bell Phonograph Corporation Ltd had full rights in the Graphophones for Great Britain.

We are indebted to Paul Tritton, of Industrial Editorial Services, and to Rolls-Royce Motors Limited, in whose JOURNAL appeared Mr. Tritton's original article on Henry Edmunds, on which the above account is based.

2. SOMETHING NEW...

Yes, Jim, but what I meant was a record having three-dimensional SOUND!

PEOPLE, PAPER AND THINGS

by George Frow

As time goes by, centenaries of recording artists will become more numerous, and hence more likely to escape notice. One that is due on November 18th will be that of Amelita Galli-Curci, the singing-bird of the gramophone. Of her, Compton Mackenzie said that she was the first soprano to make it seem worthwhile acquiring a gramophone just to hear her sing. As Caruso had done 15 years before, Galli-Curci did much to cultivate a taste for opera, and made a greater impact on records than on the operatic stage or concert platform. Without the gramophone it is unlikely that she would have achieved the heights of renown that she reached as a singer. Certainly she was never flattered by the camera and her voice is sometimes above the note and sometimes below it, and inclined at times to be nasal, but according to Fred Gaisberg she had difficulty in pitching her voice for a small recording studio after being accustomed to opera houses and halls. Nevertheless her singing and the pieces she chose have always found popularity with the buying public, in spite of her not recording much that the others didn't record. Her voice just seemed right for the acoustic process: it cut well, as did Caruso's, but at about the time electric recording arrived, it seemed to deteriorate, and she made no more discs after 1931. How popular she was is impressed on every seeker of records of singing, when so many red-label Galli-Curci records are found in comparison to more esteemed operatic prime donne. Amelita Galli-Curci was born in Milan: her father was an Italian banker and her mother was Spanish. She became sufficiently proficient on the piano to consider this for a professional career, but the reference books tell us she was heard casually singing by Mascagni, who advised her to take up the voice. Many a Hollywood musical has been founded on such a fairy-tale basis. Cosmopolitan by nature, she eventually arrived in New York, worked hard and made a success at the Chicago Opera in November 1916 and 14 months later in New York. On a London appearance at the Albert Hall in October 1924 all seats were sold three weeks in advance. She was first contracted to Victor by G. C. Child, Chief Recorder and Artists' Director. Charles O'Connell, who was musical director, while admitting he did not like soprano voices admired Galli-Curci's as a coloratura for "Its remarkable rather sultry sweetness and lyrical loveliness". She was married to her accompanist Homer Samuels.

It always seems a pity that it should fall to this column to report deaths of people associated with recording; how much better it would be if we could stick fanciful marker pins into newly-born babies whose careers would one day bring pleasure through their records, or be active members of this Society. How much better to greet than to wave farewell. The death of Colonel H. J. Drummond at the age of 101 was noticed in August. He must presumably be the Canon Drummond who was the British authority on Caruso, although his brief biography made no mention. The Daily Telegraph failed altogether to give an appreciation of the life of Stiles Allen, the soprano, who died in July aged 91. Lilian Stiles-Allen appeared on the operatic stage and concert platform before the war, and made a large number of discs for Edison Bell, both as a soloist and in concerted pieces, and was one of the 16 soloists on the Henry Wood tribute "Serenade to Music" in 1938. She later adjudic-

ated and taught, one of her pupils being Julie Andrews. Perhaps the lack of full notice in the press may be the unfortunate penalty of reaching a great age and perhaps outliving friends and admirers. In America, Maria Jeritza (Baroness Popper) has died in Orange, N. J. aged 94. She made her soprano debut in Austria as long ago as 1910, and although making quite a number of acoustic discs, her career as a recording artist seemed to peter out in the early electric days, and she has left comparatively little in comparison with many of her contemporaries.

Mention of Julie Andrews above is a reminder that her first record came out as long ago as May 1948, and was her rendering of the Polonaise from 'Mignon', and she has a spoken introduction by Vic Oliver. It is Columbia DB 2401 and is one of a pair from the London show 'Starlight Roof'. Another early bird, although completely unexpected, is J. R. (Larry Hagman) from the television 'Dallas', who appears on one side of Columbia DB 2813, 'Get out those Old Records' with his mother, Mary Martin. This record looked in briefly in this world in March 1951. Perhaps readers can identify similar or unusual appearances on record.

Dear Mr. Proudfoot,

Fearing that Barry Williamson may be feeling unnecessarily discouraged, may I through the good offices of your most excellent journal state that I find the service provided by Phonoparts to be absolutely marvellous, both in terms of the splendid range of materials, spares etc. available from them, and the rapid and courteous way in which help and advice is given.

Since my records are not of any great monetary value or rarity (I like 1920s dance bands!) I am quite happy to play most of them with steel needles - I am using Gallotone Gold at present, principally in machines with gold-plated fittings, and NOT for the ten sides claimed per needle. I find they play for three or four sides without detectable distortion, unlike the steel needles available from a source other than Phonoparts, which become chisel-shaped half-way through the first side. My family were in the music and record business from the 1890s to the 1950s, and I just remember the last days of the 78 record. Users of fibre needles were considered 'eccentric' in the trade at least from the close of the war! Steels, especially the long-playing types, were thought to be by far the best for post-war recordings. All the same, I have found no problems in playing acoustic recordings with Phonoparts fibres on my G. and T. Sheraton cabinet machine.

Apropos of Jim McCleery's proposal to record the sound of machines for posterity I am all in favour, but would suggest that his proposed list is rather biased in favour of very early machines. Naturally these are important, but I feel that there are some later items which might be worthy of inclusion. I am thinking of such machines as the Klingsor, Ultraphon, Duophone and my favourite machine for just listening to,

the HMV Lumiere. I have always felt that these were under-rated, both when introduced and at present. They have far fewer unwanted resonances than most acoustic machines.

Thank you for a most interesting and informative magazine. It has to be worth all the hard work you put into it.

Yours sincerely,

Alresford, Hants. David M. W. Evans

On the subject of 'Project Csar' (Contemporary Sound of the Acoustic Reproducer), as he has christened it, Jim McCleery has submitted the following procedural guidelines (trade-union jargon time!) for the project, beginning with three suggestions:

1) The owner / recordist must give his own opinion on how nearly he thinks his recording represents his machine(s).

2) Jim will edit the tapes received into a compilation.

3) A panel of experienced members of the Society should be set up to listen to this compilation and give their judgement on which individual recordings meet their standards.

Out of (3) will no doubt come an indication of how next to proceed, e.g. have some re-recordings to be made?

PROCEDURE:

Machines; the machines to be recorded are as set out in the confirmatory letter/letters.

Records; three records should be recorded per machine. These should comprise:

(a) One orchestral/instrumental
(b) One vocal
(c) One of light/dance music.

It is essential that all records used are contemporary with the machine and in good condition.

In making the record choice the prestige of the performer or orchestra should not be the governing factor, but rather the discs or cylinders which are judged to exhibit the machine at its best.

Taping; The type of tape recorder and microphone(s) used should be stated.

Taping should be carried out at 19 cms.

Please announce on the tape the gramophone or phonograph being recorded and the record being played. Recording should start 8 secs. after the announcement to facilitate editing. Document each recording as follows:

1) Details of machine being recorded
2) Details of record
3) The needle used
4) Whether recording was in stereo or mono - both, if possible.
5) Tape characteristics and machine setting for tape.
6) Distance of mike(s) from machine
7) Brief notes on recording room conditions
8) Any other comments
9) If you employ a decibel meter, give estimate of swing during recording with meter set beside or between mikes.

A great deal of the above is routine procedure to give a common approach and for documentary purposes. But the end objective is to obtain a recording which is, as near as possible, a faithful representation of the machine. How a judgement on this is to be made is a matter for the owner/recordist. The conclusion should be added as a note to each recording after listening to the playback. Thus

10) Judgement as to faithfulness of recording.

Bettini

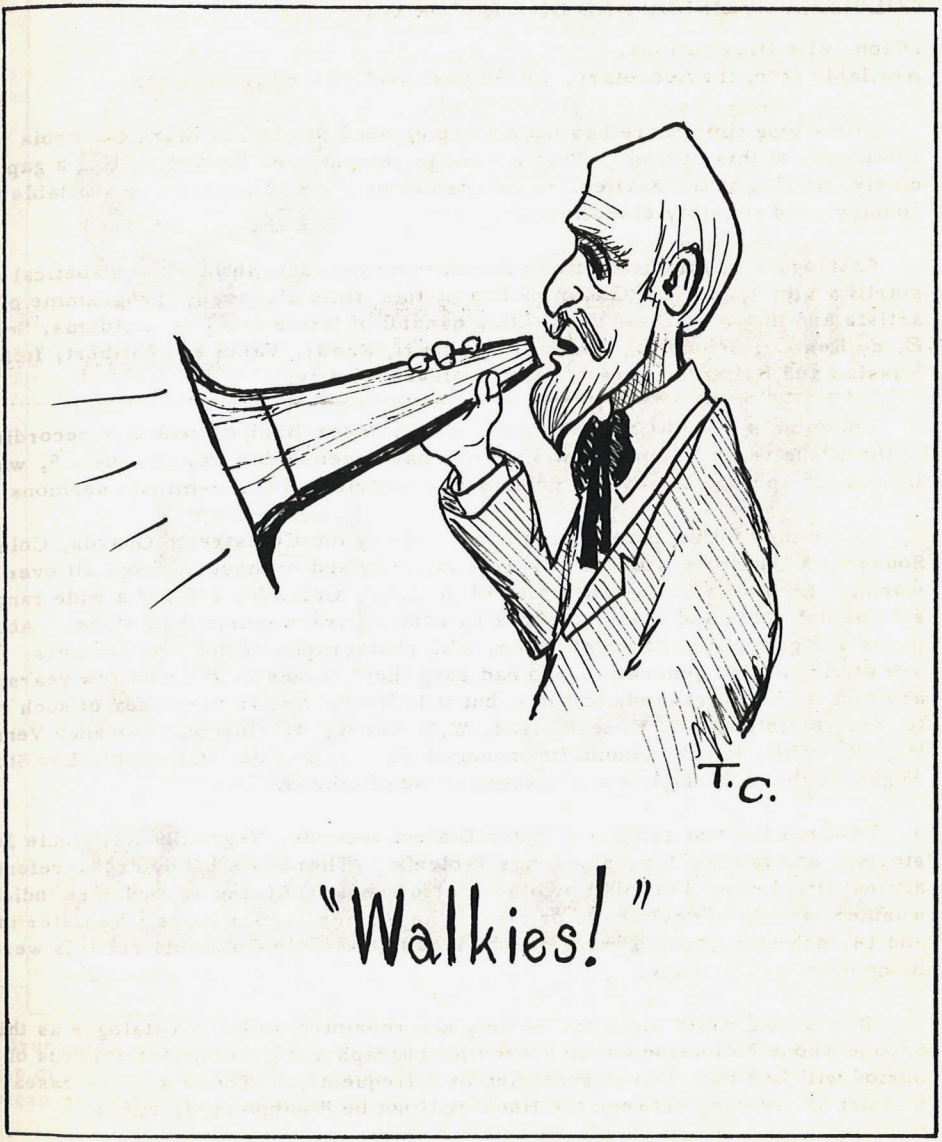
Dear Mr. Proudfoot,

The September 1965 issue of The Record Collector (Vol XVI, Nos. 7 and 8) was devoted to Bettini, his catalogues, his artists and, in fact, "all we knew about him at the time". The article lists every known Bettini artist and the catalogues (by dates) wherein these artists are found. Thus we find that Gina Ciaparelli (1881 - 1936) is represented in catalogues beginning in 1900 only. Dante del Papa (1854 - 1923) is listed in 1897, 98, 99, 1900 and 1901. The same applies to Rosalia Chalia (1865 - 1948).

Like Edison and other early companies particularly before the advent of Gold Moulding, Bettini almost certainly substituted different artists for existing titles when the master cylinders wore out, and Ciaparelli, for example, was almost certainly substituted in certain duets for earlier recordings made by Chalia.

The Archive of Recorded Sound at Stanford University, California 94305, reprinted (in 1965) the Bettini cylinder catalogues for June 1898 and April 1900 (U.S.) and the French catalogue for June 1901. These are still available. The Archive also has copies of the Bettini disc catalogue (issued as No. 1 and 2 of Vol. XVII of The Record Collector. This catalogue is dated 1904. The writer has photostats of a Bettini machine catalogue which could be made available for reproduction (along with the cylinder catalogues of May 1897 and 1900) if there is sufficient demand. May I also ask that any information on Bettini not covered by the 1965 article be communicated to me, so that the 1965 article can be up-dated.

W. R. Moran.



3. SOMETHING BARRAUD. . .

Book Review

COLUMBIA CYLINDER AND DISC RECORDS 1904 - 5

104pp. with illustrations.
Available from the Secretary, £4.50 post paid, £3.60 to members.

For a long time there has been a gaping need for one or more Columbia record catalogues of this period. This facsimile reprint goes towards filling a gap very nicely, making it the earliest record catalogue from this Company available in this country, and possibly elsewhere.

Catalogues of this kind often present their products in block alphabetical order, starting with bands, but Columbia had by this time a passable programme of operatic artists and these head the lists with a handful of items from each, Adams, Sembrich, E. de Reszke, Schumann-Heink, Campanari, Scotti, Vanni and Gilibert, followed by Russian and Italian singers of second-eleven quality.

Columbia's use of Christ Church, Westminster Bridge Road as a recording studio in the 1920s is well known, but seems to have been under way in 1904 - 5, when its incumbent was one of several priests who contributed three-minute sermons.

There then follow many pages of records by the Coldstream Guards, Columbia, Sousa's and Gilmore's Bands, as well as bands and orchestras from all over the world. Like all record companies of the time, Columbia offered a wide range of instrumental solos and many numbers by contemporary music-hall stars. About 60 pages are given over to vocal items, with photographs of their performers. Some are of the earlier generation who had sung their songs by the next few years, some are lost in the quicksands of time, but it is interesting to the owner of such records to see studio poses of Ernest Shand, W.H. Berry, Alf Gordon, Florence Venning, Hamilton Hill, Ian Colquhoun (pronounced Ion - as in lion - Ca-hoon), Leo Stormont, Edgar Coyle, J.W. Myers and a score or so of others.

Towards the end are listed Dutch Dialect records, Negro Shouts, Uncle Josh stories, and foreign language songs a-plenty. There is a handy cross-reference against titles when available by other performers. All the records are indicated as whether for sale on cylinders or discs, the former in four types, the latter in 7, 10 and 14-inch sizes, some being double-sided. 12-inch Columbia records were not being made at this time.

It is a long while since the Society has reprinted so full a catalogue as this, and anyone whose collection encompasses phonograph and gramophone records of this period will find themselves referring to it frequently. Those with the researcher's instinct or 'reading between the lines' will not be disappointed, either.

G. L. F.

This Brunswick advertisement appeared in the Norwegian magazine Dansen in the Autumn of 1927. The heading reads: "Greatest Invention since the Piano" - Says the American press about the new Brunswick products.

Our thanks to Tom Walle of Oslo for sending this, and also the illustrations on Page 107.

4: A TROPICAL PARADISE

Along the banks of the Caloosahatchee River in Fort Myers, Florida, stand great clumps of giant bamboo. This bamboo was first seen by Thomas Edison growing wild in 1885, and he used it for his electric light filaments. Good reason for Edison to establish a Winter home in this lush tropical climate – after incessant years of toil – this bright sunshine and cooling Gulf breezes was just what Edison's doctors had ordered.

Edison drew up plans for his prefabricated fourteen-acre riverfront estate in 1885, and sections of it were built in Fairfield, Maine. In a massive undertaking these sections were then transported to Fort Myers by four sailing schooners and erected the following year in this peaceful and serene tropical paradise. For the first twenty years that Edison was in residence at Fort Myers it was only accessible by boat, and this sailed only once a month. It was here that Edison experimented in his chemical laboratory with the Golden Rod weed as a source of rubber. Through crossbreeding and development he produced a gigantic strain which is said to have stood fourteen feet tall, had as much as 12% rubber, and could be harvested in a single season. Here Edison pioneered the modern synthetic rubber industry. The botanical gardens contain more than a thousand varieties of plants imported into Florida from all over the World. The garden has flourished over the years, and a banyan tree which was only two inches in diameter when Firestone brought it back from India as a gift for Edison in 1925 is now more than 400 feet around its trunk! A museum dedicated by the late Charles Edison, son of the inventor, was built to preserve memorabilia related to Thomas Edison's life and work. Here visitors are guided through inventions, patents, and equipment used by Edison covering the many aspects of work not seen at the Orange, New Jersey Historical Site. Also to be seen are the motor-cars owned and used by Edison, such as his 1908 Cadillac Opera Coupé and a Model T Ford presented to him by his friend and near neighbour Henry Ford in 1907.

This was the car to which Ford added his latest developments between 1907 and 1927, as Edison would not part with the old 'tin-lizzie' for a newer model and wanted to keep it up-to-date. Florida's first modern swimming pool was built by Edison in 1900, and it is reinforced with bamboo instead of steel. It still holds water to this day, filled by an artesian well 1,100 feet deep, which also supplies the underground irrigation system for the gardens. Over 200 Edison phonographs are on display, a feast for both eyes and ears, together with items relating to motion pictures, storage batteries and cement.

The Edison Winter Home is exactly as left by Mina Miller Edison when she died in 1947, and it represents Florida's finest tourist attraction. One could almost feel the presence of Thomas Edison on one of his 'working' vacations in this tropical paradise: Edison the practical genius, the inventor who was rated as ...."The most useful American".

INSTRUCTIONS

This reproducer is specially designed to play EDISON disc records PROPERLY.

To play EDISON records on your machine first remove the reproducer from the Tone Arm and then replace with the VICSONIA reproducer. Adjust the VICSONIA so that the face of the reproducer is parallel with the record as per illustration 1.

CARE OF JEWEL POINT

The jewel point of the VICSONIA reproducer will not wear nor deteriorate with ordinary use, but, may be damaged by careless handling.

BE CAREFUL !

IMPORTANT !

Before using the Vicsonia on new style Columbia machines make sure that the invisible automatic stop is released. This is done by moving the lever (which is under the turn-table) to the word "out". The turn-table is then operated by the lever near the speed regulator.

Genuine DIAMOND point for this reproducer can be had from your dealer or direct from us. Price $5.00.

When not using this reproducer keep it in the box for which it is designed. Place face down with point between blocks in bottom of box.

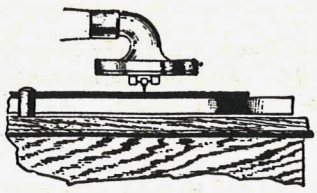


ILLUSTRATION 1
Showing position VICSONIA REPRODUCER should be on record, while playing.

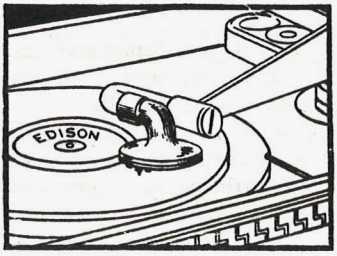


ILLUSTRATION 2
Showing VICSONIA REPRODUCER attached to VICTROLA.

ILLUSTRATION 3
Showing VICSONIA REPRODUCER attached to GRAPHONOLA.

MANUFACTURED BY

VICSONIA MFG. CO., INC.

313 EAST 134TH ST. NEW YORK, N. Y.

H. ABELS
FONOGRAF-UDSALG
CARL JOHS GD. 35.
CHRISTIANIA

No.

Label from a brown wax Norwegian cylinder carton, circa 1905.

The Vicsonia was one of several attempts to make records play on incompatible machines that appeared in the 1920s in the U.S.A. The lateral-cut system was, for patent reasons, less universal there than in the U.K. A number of Vicsonia reproducers have found their way across the Atlantic in recent years.
The Rex ad. is from a Norwegian catalogue of Christmas, 1935.

RECORDS FOR D Js

by Paul Collenette

The B. B. C. Gramophone Record Library is probably the most famous and largest record collection in the world. Few people have had the opportunity to see it, however, as it is not open to the general public. As a result of the good offices of the local radio station, I was shown round the library by the assistant librarian.

The library was started in 1932 to provide a service to programme departments which wished to use commercial recordings in their programmes. Up until then, almost everything radiated was 'live', but Christopher Stone had pioneered record programmes.

There are about 300,000 78s (some duplicated) stored in the Langham building next to Broadcasting House. This had been a top-class hotel until closed in 1940, as a result of the roof-top water tanks leaking disastrously and ruining the furnishings. The building was undamaged by nearby bombs during the war, because of its fortress-like construction. The exterior may look like a prison, but inside it is impressively grand. Night-workers in the building are, however, more concerned with encountering the hotel ghost, who takes the form of a butler.

The 78s themselves are not lent out: twice daily a batch is sent over to the main library and they are taped. One tape per record is prepared, and it is these that are sent out. This is done on a pair of ancient Speed 78-only turntables with parallel-tracking arms. Although the equipment is very old, it performs the task wholly satisfactorily.

The main library, which has the L. P. s and 45s, is housed separately. It comprises approximately one million records, and grows by 20,000 to 30,000 records per year. All British issues are bought (sometimes two copies if demand is thought to be high), and some foreign.

The storage system is divided into mono L. P. s , Stereo L. P. s and singles. Then they are classified by label (arranged alphabetically) and finally by alphabetical and numerical order of catalogue number.

There is a space problem.

It could be helped by using an extra tier of racks, but the floor might then collapse. Even L. P. s are heavy in this bulk, and the reinforced concrete floor is already at maximum loading. (The 78s, unsurprisingly, are kept in a basement.) It should be noted that this library contains only commercial records. Sound effect, interlude music, B. B. C. -made recordings etc. are not kept here.

The work of cataloguing, storing and selecting, ordering, dispatching etc. is a large one and it takes 48 staff to run the library. They loan out around 3000 - 4000 records a week to the many London and provincial studios of the B. B. C.

Naturally, with so many records out on loan at once, it is essential to be able to account for - and get back - the records. An efficient system of paperwork ensures this. The system is that a programme producer requiring certain records sends an order form to the library. Of course, specific numbers and titles are preferred by the library staff, but they often get vague requests such as 'Steam-train music' or 'Hawallan'. In these cases, the specialised knowledge of the staff is well used.

Each record has a label listing borrowers (as a library book) on which details are entered, and likewise on the order forms. The record is then sent, with invoice, to the studio by means of the GPO Datapost service.

New records which are taken into stock are dealt with in the following way. Three index cards are completed: by title, composer and artist. All records are inspected for damage on arrival from the wholesalers. Each record is kept in a 'masterbag' on which the details of the borrowing are listed. When the record is loaned out, the masterbag is retained at the library in date order. This enables late returns to be identified and chased up. This is a constant problem as certain producers are notoriously slow in returning records, which of course may be urgently required elsewhere.

One of the large metal cabinets had until recently been facing the wall. It was almost impossible to turn round, being full of records which were inaccessible. It was moved with much difficulty and the contents examined. It turned out that it was filled with duplicate records current at the time of the Cuba crisis. The reason was that if there had been World War Three and most of the country were wiped out, at least there would have been plenty of records to broadcast.

In addition to records, the library has a large collection of catalogues from the major record companies, some from many years back. New ones are added periodically, both British and Foreign.

It can be seen therefore that the BBC gramophone record library has a little-known but extensive operation which performs a function vital to the broadcasting service.

August Meeting

ROUND THE HORN (with apologies to the B. B. C.)

The evening was spent exploring the opposite end of the phonographic spectrum. Instead of listening to commercially-made cylinder records, we actually took part in making some cylinder recordings.

Two of our younger members, Duncan Miller and Paul Morris, have been very enterprising in experimenting and developing a wax (strictly a soap) suitable for recording on, and are marketing blank cylinders in both standard and concert size, together with properly-constructed and lined boxes. Also their services cover Edison-type recorders, recording horns and sapphire styli.

Several records were made by members of the audience during the evening. These

included a mouth-organ solo, some whistling, and songs by Frank Andrew's daughter. Our Chairman, being by profession an auctioneer, was prevailed upon to make a parody of the famous 'Auction Sale of a Piano', and finally the audience all joined in in an old-time sing-song, ably accompanied on the piano by Paul Morris.

In the days of acoustic recording, it was very much part of the art to arrange the singers and instruments so that they recorded well, and considering that we were not acquainted with these principles, the recordings turned out very well.

A further part of the Miller-Morris service offered is black wax pre-recorded cylinders, complete with white lettering on the end, and an announcement . In reply to a question, it is understood that a cylinder copying service would soon be available. The demonstration was accompanied by slides showing some of the manufacturing processes and machinery used. A few previously-made records were played, including a barrel-organ (not a street piano), a banjo, violin, accordeon, one Harry Harper singing 'Willie's Wild Woodbines', and the Sevenoaks town band. A very worthwhile enterprise, and one in which all members will wish Messrs. Miller and Morris every success.

Finally, our thanks to John McKeown for arranging the use of the Eccentric Club rooms for us, and for laying on tea and sandwiches.

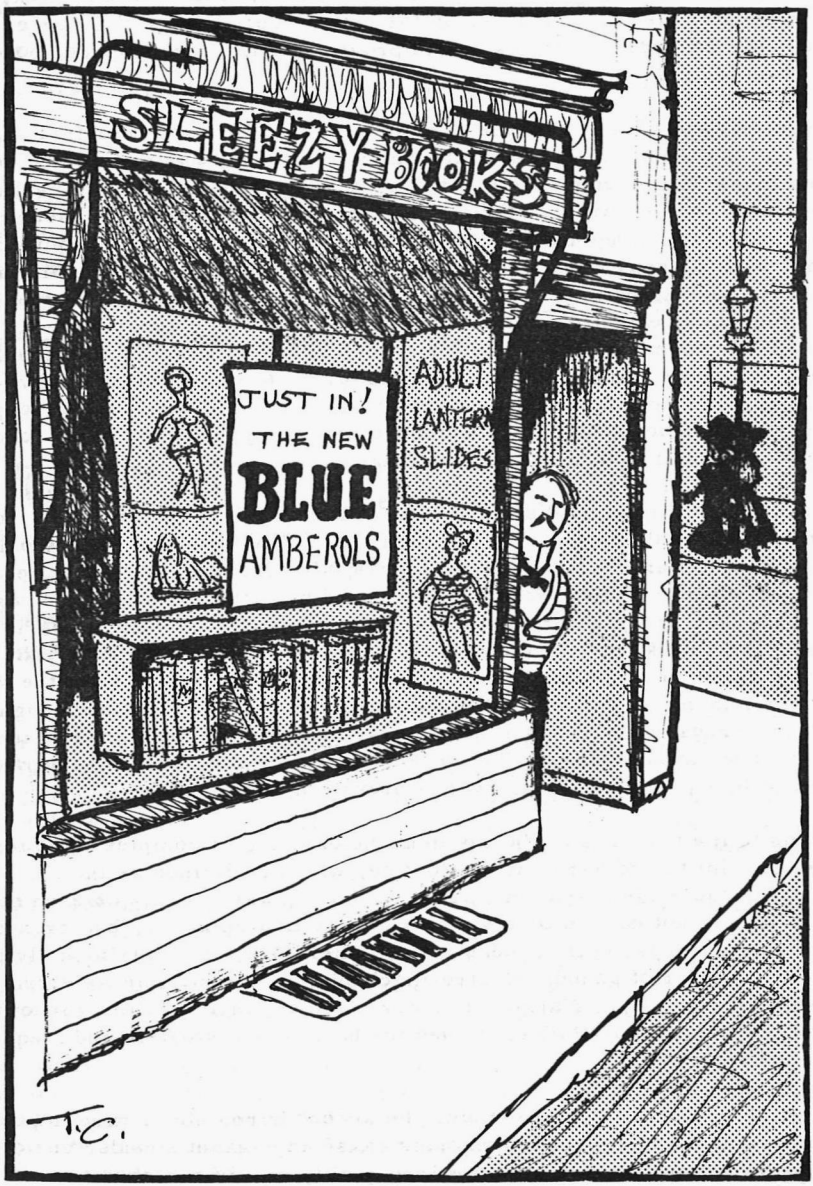
London Reporter.

SOUND REFLECTIONS AND ECHOES — 11

THE CHARACTERISTIC SOUND OF EARLY ELECTRIC RECORDINGS

Many years of listening to recordings of all types has often prompted me to ask: What makes the unique characteristic sound quality or 'voice' that enables us to distinguish one type of recording from another? Long ago, as a schoolboy, I could identify at the cinema during the opening credits of a film, whether the sound track was variable-area or variable-density print, before either the former (RCA Photophone) or the latter (Western Electric Sound System) logo appeared - usually the last credit to appear on the screen.

In a lifetime spent in audio engineering, all manner of equipment, systems and components come in for comparative scrutiny: the differences between moving-coil and crystal pick-ups or microphones; between a programme on MW and LW radio, or AM and FM; between amplifiers with or without feedback, with pentodes or triodes, with valves or transistors, push-pull or single-ended; between different types of public address and theatre system; between different tape speeds on the same machine; and between different makes, whether of whole systems or just different components.


SLEEZY BOOKS
JUST IN!
THE NEW
BLUE
AMBEROLS
ADULT
LANTERN
SLIDES
T.C.

4. . . . . .

Most early electric recordings had a superb tonal blend on a 'big band' dance tune, particularly so when one considers the crudeness of the microphones used - and only four of them at that, using techniques little better than the standard telephone practices of the time. In many instances, the same bands, when recorded years later, sounded thin and lifeless, even allowing for better reproducers. I wonder why this should be: the recording systems had improved frequency responses, power handling and distortion factors.

I thought hard on this. The problem seemed paradoxical and defied logical explanation.... but then, in the late 1950s and early 1960s two unconnected events were to give me clues which eventually yielded what appears to me to be the solution. As second engineer in a recording studio, I had the job of assessing an assortment of cheap, robust microphones for studio talkback use – several were required and so it was economical to spend some time on the choice and buy a batch all similar. We tried crystal, comparing it to various moving coils. The crystal had typically a very flat frequency response over very wide limits. The comparison with the moving coil was a matter of personal choice for speech use; but when an additional academic music test was made using various musical sources (i.e. on complex wave-forms), it was not so good. We settled here for the moving coil microphones but for other reasons — they did not require non-standard pre-amps and were more robust, another important criterion in commercial recording.

About the same time, we did an l.p. recording of the 'Popular songs from yesteryear' genre with a well-known artist of the time. The idea was hardly original even then: the A and R man recorded all the tracks 'straight' and on re-mix recreated what he considered to be the 1920s - 1930s sound by cutting both top and bass using steep-cut filters. Some reference was actually made by the vocalist early on the first side to the 'Let's turn the clock back' stuff, to add authenticity. The resulting sound was <u>not</u> convincing - even when played on cheap reproducers of the time – you remember them: crystal pick-up, single-ended valve circuit and a light 5-inch or 6-inch loudcspeaker. Those reproducers, made by the thousands (many still survive) were known in the trade as 'boxes' and were rich in harmonic distortion and decidedly not hi-fi, even to the standards prevailing then.

It seems to me that it is all bound up in the handling of complex wave forms, not just frequency limits and harmonic distortion, which is defined as the sum and difference signals produced in a system by two, or more, wave-forms on each other. Generally, IMD is not caused to any major degree in amplifiers, but 'transducers' – loudspeakers, pick-ups, cutting-heads etc. Therefore, it is intrinsically bound up in the power transfer of sound: electro-mechanical, or mechanico-electric (but not often expressed as such). Normal feedback circuitry in amplifiers cannot usually correct or compensate for IMD as it does for harmonic distortion and frequency non-linearity, for example.

T.H.D. is not too hard to study: the second harmonic is rare in good push-pull circuits, but the higher odd harmonics cause unpleasant sounds, one cause being transformers of insufficient size, poor iron quality or mis-matched circuit-to-load.

$$THD = \sqrt{\frac{E_2^2 + E_3^2 + E_4^2 \ldots\ldots}{E_1^2 + E_2^2 + E_3^2 \ldots\ldots}} \times 100$$

D = % of THD

E_1 = fundamental voltage; E_2 = second harmonic V, etc.

IMD: this is the production of sum and difference signals when two or more frequencies are processed by a system, e.g. if 75 hz and 1k hz were applied to a non-linear system, modulation occurs one on the other, and the resultant complex signal contains not only 75 and 1k, but 1075, 925, 1150 and 850 hz etc. (and possibly 2075, 1925 etc.). This effect, to any serious degree, can be more noticable than an equivalent factor of T.H.D., because the generated frequencies are not harmonically related to either original.

$$IMD = \sqrt{\frac{\left(E_{F2+F1} + E_{F2-F1}\right)^2 + \left(E_{F2+2F1} + E_{F2-2F1}\right)^2 \ldots\ldots}{E_{F2}}}$$

IMD = % of IMD

E_{F2} = higher frequency

E_{F1} = lower frequency

Many different choices of frequency have been used – usually the higher is one quarter of the level of the lower. Some examples are:

50hz and 1k (Briggs)	40hz and k (Decca)	60hz and 2k (EMI)
82hz and 900 (Briggs)	70hz and 7k (Decca)	50hz and 2K5 (SMPTE)
100HZ and 5k (King)	100hz and 4k (Philips)	40hz and 9k (SMPTE).

It appears that only in the U.S.A. is the IMD rating seriously considered, and the reasonis, I suspect, due to various factors:

It requires very specialised and expensive equipment to make tests.
Much time and skill is required to conduct these properly.
The criteria are not fixed, so various interpretations can be put on the results.

Thus manufacturers quote, and buyers both professional and amateur are content with all the other facts and figures on audio eqipment. According to the method of test chosen, entirely different results can be obtained from the same set. Another approach is to take two near test frequencies at the same level (e.g. 14k and 15k or 10k and 11k, both of which will produce a 1k beat note which can be measured). One advantage

here is that the sum frequency is so high as to be non-applicable to the test, or at least easily filtered out for separation purposes.

Also to be considered on mechanical systems (tape/disc/film as opposed to radio or lines etc.) is wow and flutter, which also entails the measurement of modulations of a base frequency (often 3k is used here). In the case of tape recording, the H.F. bias must be pure (sinusoidal): the audio and this bias are mixed, not modulated, and any harmonic present in the bias (anything from 45k to 100k) will cause distortion on the tape.

IMD is not only difficult to define, but also to describe. The most dramatic example was 'Sparky's Magic Piano' effect; here it was deliberately produced by ring modulators.

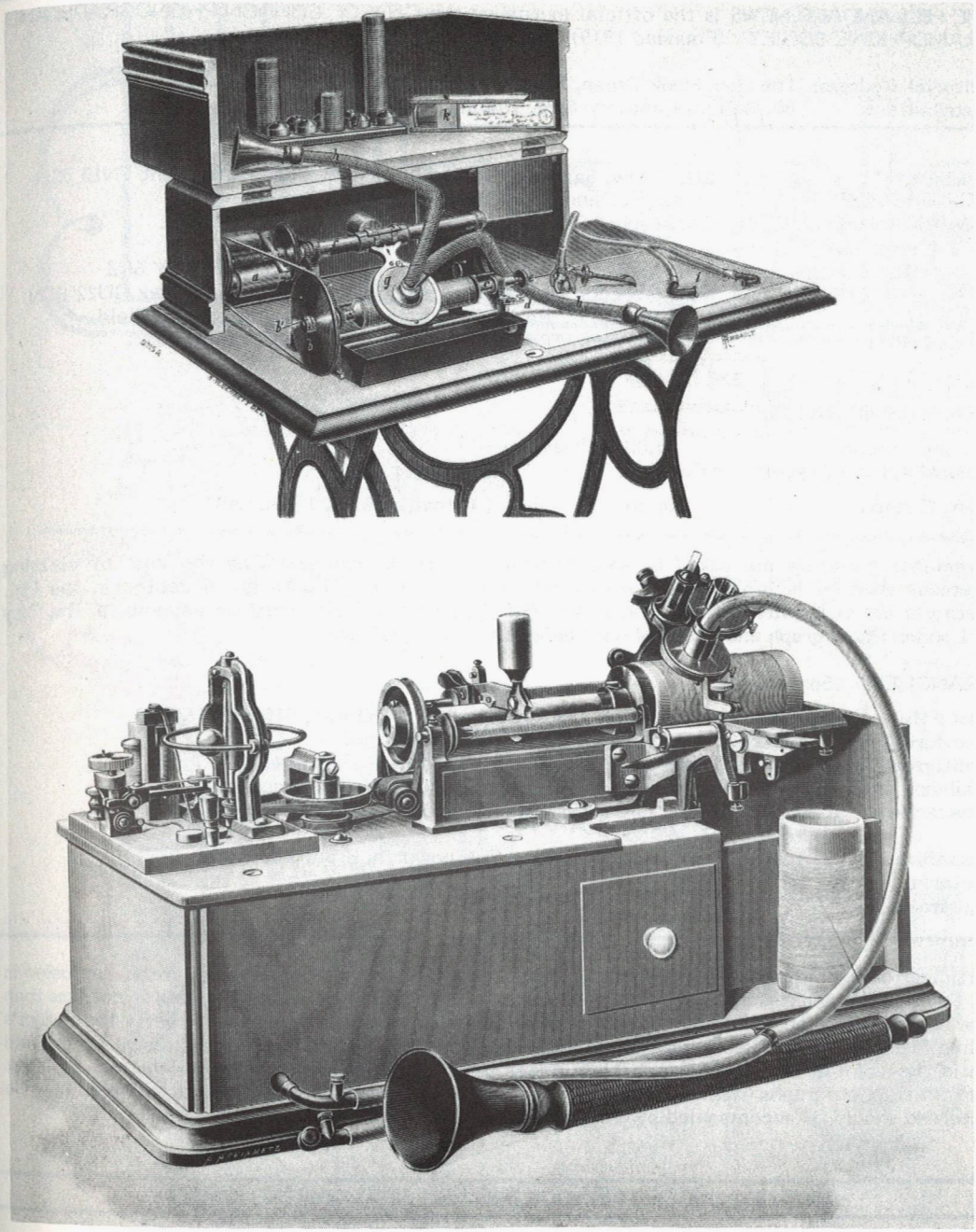
What are the permissible limits? Again there is much variation, but one source gives a maximum of 0.2% THD and 0.4% IMD of full-rated power of a good domestic set. And it must be realised that there is some inter-effect between the two. Sometimes we are aware of more than one main source; that peculiarities of both a 'recording system' and a 'reproducing system' are causing the end effect; ideally the latter should compensate for shortcomings of the former. It must be borne in mind that in orchestral and vocal work the sumation/differential tones are a natural part of the studio sound reaching the audience or microphone (one main reason why outdoor work is different). Think how important the differentials are – literally 'beat-notes' in a close harmony quartet – below the response of any system, re-combining at various stages of recording and reproduction.

In modern practice, much of the rationale behind multi-track recording and 'bi-amping' on replay (where an electrical cross-over is used to feed two or more loudspeaker systems each with its own amplifier) is based on eliminating various cross-talik, IMD etc. This method approaches the purist, theoretical practice of separate, isolated (but synchronised) tracks for each major instrument, vocal or section. When looked at in this light, it is remarkable how good much of the early mono work was at its best.

So at last I return to my theme – by a circuitous route admittedly – but you can see now why I believe this factor of power-handling of complex wave-forms (bound up tightly with IMD) must be the main criterion which determines the true tonal quality to make the characteristic sound of most systems, including the 'Heart and soul of the gramophone'.

Barry Raynaud.

The GRAPHOPHONE in the engraving on the opposite page (which originally appeared in Engineering in September 1888) was presumably Edmunds' own, since the cylinder carton is addressed to him. (Graphophone cylinders were presumably much more suitable for posting than Edison's wax records). It seems not unlikely that, by the same token, the Edison machine in the same illustration was Colonel Gouraud's own.



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